



**SUPPLEMENTAL COMMENTS OF  
ENVIRONMENT NORTHEAST TO THE  
MASSACHUSETTS ADVANCED BIOFUELS TASK FORCE**

**March 14, 2008**

Rockport, ME  
Portland, ME  
Providence, RI  
Hartford, CT  
New Haven, CT  
Charlottetown, PEI, Canada

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Environment Northeast (“ENE”) appreciates the opportunity to provide the following comments, which supplement ENE’s January 17, 2008 statement and provides our comments regarding the Task Force’s Draft Summary Recommendations. At the outset, ENE commends the Task Force for its thoughtful approach throughout the hearing and deliberation process. We look forward to continuing to assist the Task Force as it refines and finalizes its recommendations.

ENE is a nonprofit research and advocacy organization focusing on the Northeastern United States and Eastern Canada. Our mission is to address large-scale environmental challenges that threaten regional ecosystems, human health, or the management of significant natural resources. We use policy analysis, collaborative problem solving, and advocacy to advance the environmental and economic sustainability of the region.

We applaud the Task Force’s focus on the need for a low carbon fuels standard that looks at all ways to reduce the carbon intensity of the region’s transportation and heating fuels and boost investment in the local biofuels industry. While there are a number of excellent reasons for developing a domestic, Massachusetts-based biofuels industry—among them energy security, fuel diversity, cost savings for consumers—it is imperative that we ensure that our biofuels investments yield demonstrable and significant reductions in the full lifecycle emissions of greenhouse gases (“GHG”) when compared to traditional fossil fuels. Aside from the clear climate benefits this approach will bring, it will ensure that the local biofuels industries that result will be well positioned to compete in a regional or national low carbon fuels standard.

To assist the Task Force, we offer the following comments about specific chapters in the Draft Summary Recommendations.

CHAPTER 1 – Potential Economic Benefits

ENE commends the Task Force for tackling the difficult task of projecting benefits and identifying that the focus should be on economic incentives for those fuels that carry GHG benefits because, in the long run, GHG reducing fuels will be the winners and will form the cornerstone of the biofuels industry of tomorrow.

CHAPTER 2 – Energy and Environmental Lifecycle of Advanced Biofuels

Developing robust lifecycle evaluation metrics for carbon, environmental and economic impacts of biofuels will be an essential component of any global biofuels strategy. Massachusetts should closely monitor the lifecycle analyses and modeling protocols currently being developed by CARB and EPA.<sup>1</sup>

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<sup>1</sup> See Energy Independence and Security Act of 2007 (H.R. 6) § 201 (1)(H); <http://www.arb.ca.gov/fuels/lcfs/lcfs.htm>

Once EPA and CARB have concluded their respective rulemakings, Massachusetts should evaluate each and should adopt the standard that maximizes greenhouse gas reductions. We believe that the Commonwealth should exercise caution in developing any biofuels policies before these lifecycle assessments and standards are developed.

We commend the Task Force for acknowledging that any lifecycle GHG comparison between biofuels and fossil fuels must be done on an even playing field. To that end, we urge the Task Force to recommend that any full lifecycle GHG analysis that is adopted employ a rule of reasonableness when considering indirect impacts of each fuel type. Certain indirect impacts will be significant and will have strong causal links, others will be more attenuated. It is important that on both sides of the ledger reasonable lines be drawn to ensure a workable and accurate GHG accounting.

We believe that any reference to “substantial” reductions in lifecycle GHG reduction should be tied to federal Renewable Fuel Standards: 50% for biodiesel<sup>2</sup> and other advanced biofuels<sup>3</sup> and 60% for cellulosic biofuels.<sup>4</sup> While acknowledging that waste feedstocks will often have much lower full life-cycle GHG impacts, we urge the Task Force to carefully consider whether an exemption from these analyses is appropriate. Collection techniques and associated vehicle emissions can have a significant impact on whether waste feedstocks will lead to appropriate reductions in GHGs.

Recent scientific studies have cast further doubt on the ability of biofuels to reduce greenhouse gas emissions when compared to fossil fuels. In fact, large-scale cultivation of biofuels could lead to increases in emissions. Devoting large areas of land to biofuel production displaces crop and meat production. This will either lead to new forest and grassland being cleared for crops, or increased cultivation of marginal agricultural lands that would otherwise have been allowed to revert back to forest or grasslands. Clearing forests for crops causes large releases of greenhouse gases.

Older models that calculate the life-cycle emissions of fossil fuels and biofuels have not been able to account for the indirect emissions impact associated with land use change. However, two studies recently published in the online edition of *Science* magazine look at this issue in detail.

The first study, done in cooperation with The Nature Conservancy and The University of Minnesota<sup>5</sup>, found that the negative emissions impact of converting rainforests, peatlands, or grasslands to produce biofuels in tropics and the in United States was 17 to 420 times larger than the greenhouse gas reductions these biofuels could provide by displacing fossil fuel use. In contrast, biofuels made from waste biomass or from abandoned agricultural lands planted with perennial crops offer immediate and sustained greenhouse gas benefits.

The second study<sup>6</sup> found that using corn ethanol in place of fossil fuels doubles greenhouse gas emissions over 30 years. Upfront emissions from land conversion are large, and the study showed it would take 167 years for the emissions benefits of corn ethanol to balance out the upfront losses. Using switchgrass to make ethanol also increases emissions by 50%. However, Brazilian sugarcane has the

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<sup>2</sup> H.R. 6 § 201 (1)(D)

<sup>3</sup> *Id.* at § 201 (1) (B)

<sup>4</sup> *Id.* at § 201 (1) (E)

<sup>5</sup> J. Fargione, J. Hill, D. Tilman, S. Polasky, and P. Hawethorne. 7 February 2008. Land clearing and the biofuel carbon debt. *Science*. (10.1126/science.1152747).

<sup>6</sup> T. Searchinger, R. Heimlich, R.A. Houghton, F. Dong, A. Elobeid, J. Fabiosa, S. Tokgoz, D. Hawes and T. Yu. 7 February 2008. Use of U.S. croplands for biofuels increases greenhouse gases through emissions from land use change. *Science*. (10.1126/science.1151861).

potential to reduce emissions after 4 years in certain cases, and the study found that waste products (municipal waste, crop waste and grass harvests) could also provide immediate benefits.

While the exact numbers shown in these studies are sensitive to assumptions about the scale of biofuel production and advances in technology, it is clear that any large increase in production has the potential for serious negative impacts.<sup>7</sup> These new findings need to be well understood by policy makers and supporters of new incentives for the production of biofuels. The full lifecycle impacts of biofuels production, including impacts on land use, must be considered in order to ensure new policies in fact deliver a net reduction in greenhouse gas emissions.

These new findings were considered to be of international importance and were very well covered by the press, as can be seen in the attached sample of articles on the subject.

### CHAPTER 3 – Biofuel Feedstocks

The Task Force appropriately notes that we should be exploring in-state feedstocks for a variety of energy applications—liquid fuels, electric power generation, heating fuel, and combined heat and power. We strongly support committing to additional research for the use of crop agriculture, forestry, and forest/agricultural waste, and believe that the focus must be on *sustainable* use of Massachusetts natural resources. This involves an appropriate assessment of the additional supply of biomass that can be extracted without resorting to harvesting practices that harm future forest or cropland productivity, or diverting supply from other important industries. To this end, coordination with the Massachusetts Sustainable Forest Bioenergy Initiative is crucial to ensure that the biomass resources are not only sustainably harvested, but also put to use in the most efficient manner possible. In addition, we are broadly supportive of the development and support for biorefinery technologies that produce fuels with a substantial reduction in lifecycle greenhouse gas emissions.

### CHAPTER 4 – Statutory and Regulatory Support

We commend the Task Force for its focus on a regional low carbon fuel standard (“LCFS”). A regional LCFS, which looks broadly at all technologies, will bring the focus to reducing the carbon intensity of our transportation and heating fuels, and will most efficiently promote investment in biofuels with the best carbon performance. While a regional LCFS will take time to implement, it is the proper long-term vehicle for incenting investment in biofuels because it rewards fuels with the lowest carbon intensity while being technology neutral.

As the recent tempest surrounding the February 7, 2008 *Science* articles makes clear, the science around quantifying the greenhouse gas emissions that result from the production of biodiesel and other biofuels is far from certain.

Because the science and modeling around the appropriate methods for measuring the full lifecycle greenhouse gas emissions of biofuels development continues to evolve rapidly, and because neither EPA nor CARB have completed their protocols, ENE strongly believes that it is premature to enact a

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<sup>7</sup> The *Science* articles are not the only recognition that land use impacts will have a dramatic impact on the full lifecycle greenhouse gas emissions of biofuels production. Indeed, University of California at Berkeley Professor Alex Farrell, in a recent memo to the California Air Resources Board, underscored this sentiment when he wrote “we do not expect a better analysis to change the overall result that land use change will be a [sic] found to be [sic] *very large contributor* to the global warming impact” of biofuels production. See Farrell, A., “Memorandum: Greenhouse gas (GHG) emissions from indirect land use change (LUC),” January 12, 2008, p.2 (emphasis in original), available at [http://www.arb.ca.gov/fuels/lcfs/011608ucb\\_luc.pdf](http://www.arb.ca.gov/fuels/lcfs/011608ucb_luc.pdf)

mandatory blending requirement for biodiesel and bio-heating oil. From the perspective of our shared goal of climate protection and achieving GHG reductions, it is simply too risky at this juncture to adopt such a blunt policy instrument. We believe it will be extremely difficult to undo such mandates once in place even if it is later determined that the selected technologies (*e.g.*, biodiesel) lack demonstrable climate benefits; it is far more prudent to allow more scientific data and analysis to evolve to determine whether such mandates are appropriate policy choices.

In the event that the Task Force decides to retain its recommendation for transitional blending mandates, it is essential that these requirements contain significant climate protections. First, any blending requirement should not be launched unless and until CARB and EPA have concluded their respective rulemakings in determining the appropriate model for measuring and verifying the full lifecycle greenhouse gas emissions of both biofuel and fossil fuel productions. Only then can we be certain that an investment in biofuels brings substantial climate, as well as economic benefits. Once EPA and CARB have adopted models, Massachusetts should evaluate each model and select the one that provides the greatest climate benefits. Second, we believe that to be eligible for a biodiesel or bio-heating oil mandate, consistent with the federal Renewable Fuels Standard, the fuels must demonstrate a 50% reduction in lifecycle greenhouse gas emissions over fossil fuels. Third, and perhaps most importantly, the agency administering the blending requirement implementation must be required to suspend or delay the program if it determines that the available biodiesel fuels do not provide appropriate GHG benefits.

#### CHAPTER 6 – Grants, Loans and Tax Incentives

ENE strongly supports providing a gas tax exemption for cellulosic ethanol to encourage the market for these fuels. We believe that to be eligible, any cellulosic fuel must meet the federal Renewable Fuels Standard threshold of a 60% reduction in lifecycle greenhouse gas emissions. As referenced above, Massachusetts should evaluate the models for measuring lifecycle greenhouse gas emissions being developed by CARB and EPA and select the model that provides the greatest climate benefits.

The Task Force's recommendation that the Commonwealth consider tax incentives for cost-effective in-state feedstock production is a sound one. With appropriate considerations, such as sustainable harvesting, domestic feedstock production can boost our local economy while reducing the carbon intensity of biofuels when compared to foreign biofuels and fossil fuel production.

We welcome the idea of strategic research partnerships between local biofuels companies and our state colleges and universities in developing and commercializing low carbon biofuels.

Environment Northeast appreciates the hard work and thoughtfulness with which the Task Force has approached the development of its Draft Summary Recommendations. We also appreciate the opportunity to provide these comments and stand willing to assist the Task Force as it finalizes its recommendations.

Respectfully submitted,  
ENVIRONMENT NORTHEAST

*/s/ Jeremy McDiarmid*

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By: Jeremy McDiarmid, Staff Attorney

## Attachment 1: Summary of press related to the two Science articles

The following is a sampling of regional, national and international press related to the release of these two studies.

### Studies Say Clearing Land for Biofuels Will Aid Warming

Washington Post, United States – February 8<sup>th</sup>, 2008

By Juliet Eilperin

### Biofuel crops increase carbon emissions

Los Angeles Times, CA – February 8<sup>th</sup>, 2008

### Studies Deem Biofuels a Greenhouse Threat

New York Times, United States – February 7<sup>th</sup>, 2008

By Elisabeth Rosenthal

### Study: Ethanol May Add to Global Warming

The Associated Press – February 7<sup>th</sup>, 2008  
Washington (AP)

### Biofuel: Bad for the Environment?

ABC News – February 7<sup>th</sup>, 2008

By Ashley Phillips

### Studies Suggest Biofuels Can Worsen Warming

Wall Street Journal – February 8<sup>th</sup>, 2008

By Gautam Naik

### Little Carbon Sink on the Prairie

Wall Street Journal – February 7<sup>th</sup>, 2008

### Clearing Land for Biofuels Makes Global Warming Worse

National Geographic, DC – February 7<sup>th</sup>, 2008-02-21

### Biofuels Are Bad for Feeding People and Combating Climate Change

Scientific American – February 7<sup>th</sup>, 2008

By David Biello

### Study reveals that biodiesel may not save as much as thought

Peoria Journal Star, IL – February 8<sup>th</sup>, 2008

By Terry Bibo

### Studies: Biofuels use could worsen warming

DesMoinesRegister.com, IA – February 8<sup>th</sup>,

2008

By Philip Brasher

### Environment / Study warns of biofuels' effect on climate

Pioneer Press, MN – February 7<sup>th</sup>, 2008

By Dennis Lien

### Studies: Biofuels will boost greenhouse gas emissions

DesMoinesRegister.com, IA - February 7<sup>th</sup>, 2008

By Philip Brasher • Register Washington Bureau

### Some biofuels can add to global warming

Minnesota Public Radio, MN – February 7<sup>th</sup>, 2008

by Stephanie Hemphill

### Biofuel Farms Increase CO2 Emissions

dBTechno, MA – February 8<sup>th</sup>, 2008

### 2 studies conclude that biofuels are not so green after all

International Herald Tribune, France – February 7<sup>th</sup>, 2008

By Elisabeth Rosenthal

### Biofuels not 'miracle' cure, studies say

Toronto Star, Canada – February 8<sup>th</sup>, 2008

### Biofuel drive might raise CO 2

Financial Times, UK – February 8<sup>th</sup>, 2008

By Clive Cookson

### Biofuels make climate change worse, scientific study concludes

Independent, UK – February 8<sup>th</sup>, 2008

By Steve Connor

### UPDATE 1-Food-based biofuels can spur climate change-study

Reuters UK, UK – February 7<sup>th</sup>, 2008

By Deborah Zabarenko

Biofuel crops 'increase carbon emissions'

Telegraph.co.uk, United Kingdom – February 2<sup>nd</sup>, 2008

By Paul Eccleston

Digging up land for biofuels is 'pointless'

Telegraph.co.uk, United Kingdom – February 8<sup>th</sup>, 2008

By Paul Eccleston

Revealed: biofuels' carbon debt

LIVENEWS.com.au, Australia – February 8<sup>th</sup>, 2008

Biofuel benefits under fire

InTheNews.co.uk, UK – February 8<sup>th</sup>, 2008

The biofuels threat

Scenta.co.uk, UK – February 8<sup>th</sup>, 2008